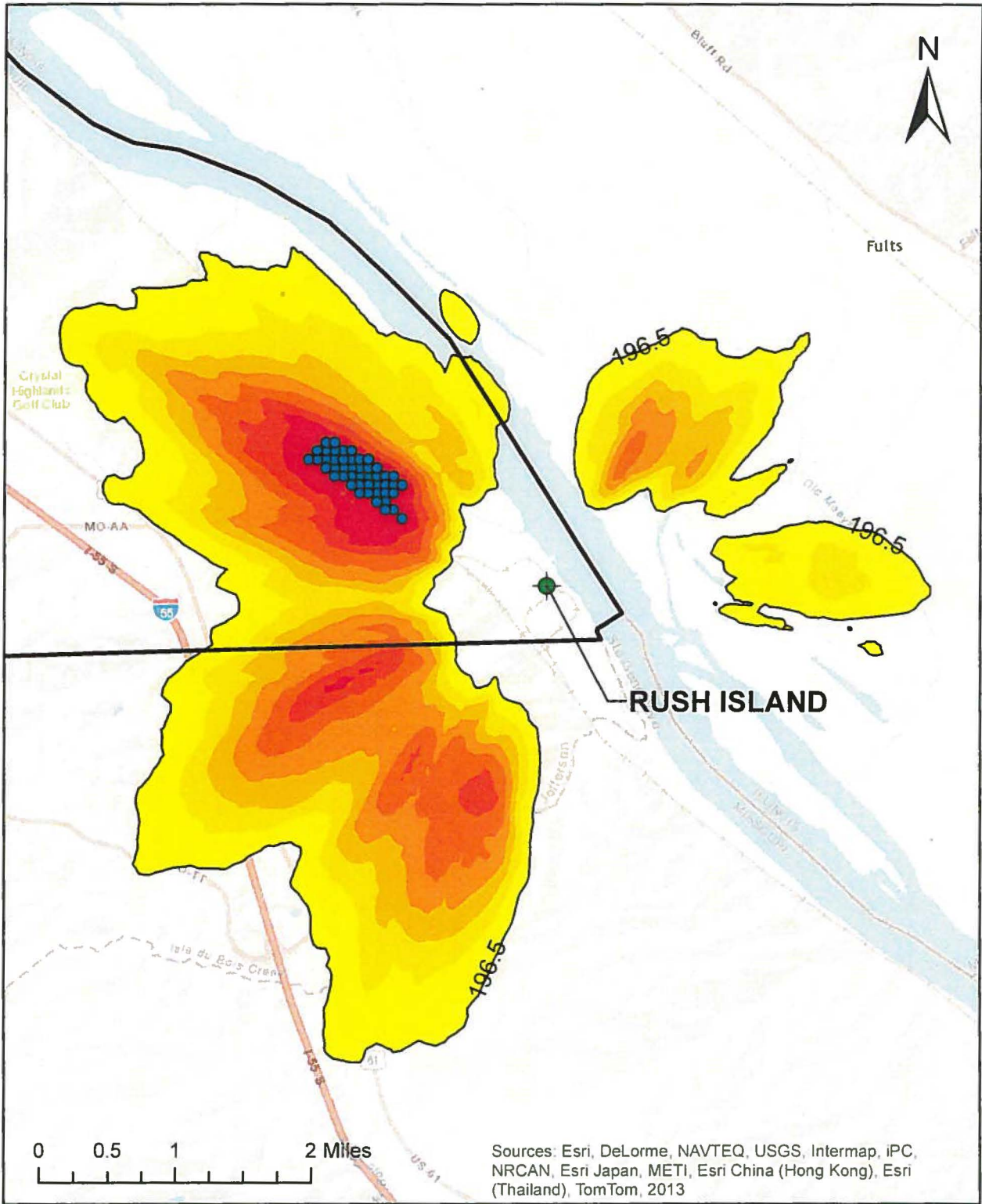


Enlargement Showing the Fifty (50) Receptors with the Highest SO2 Design Values

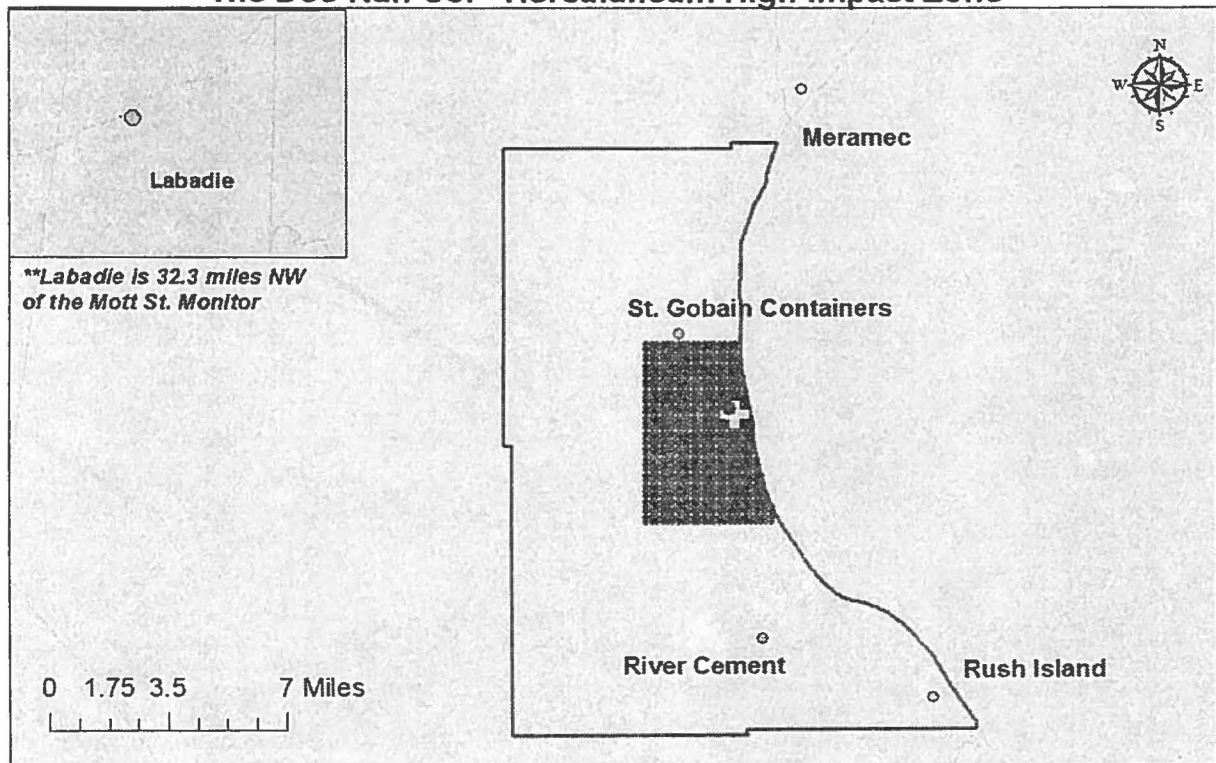


● Receptors

SO2 Design Values (ug/m^3)					
196.5 - 200	211 - 220	231 - 240	251 - 260	271 - 280	
201 - 210	221 - 230	241 - 250	261 - 270	281 - 290	

The High Impact Zone (HIZ) is the area surrounding the Doe Run Herculaneum facility where refined air dispersion modeling predicts the emissions from Doe Run Herculaneum alone would violate the 2010 1-Hour SO₂ NAAQS. Illustrated below, the HIZ includes the area surrounding Doe Run Herculaneum and the violating Mott Street monitor. [The Mott Street monitor is a site-specific monitor intended to capture the impacts of sulfur emissions originating from the Doe Run Herculaneum facility.] The HIZ approach is based on this fact and evaluates Doe Run Herculaneum as the single-source contributor. The model was based on a simple evaluation of the Doe Run Herculaneum facility represented as a single stack using actual emissions data as reported by Doe Run in its annual Emissions Inventory Questionnaire (EIQ). Actual SO₂ emissions data from calendar year 2010 corresponding to the highest actual SO₂ emissions emitted at Doe Run Herculaneum was selected for analysis. The meteorological data set used to model Doe Run Herculaneum is an on-site data set. Any additional analysis of fugitive emissions was not conducted due to the lack of data from the facility on the characterization of sulfur emissions. Further analysis was deemed unnecessary for the purposes of determining the HIZ. Based on this simple model structure, the analysis shows that the violating monitor is located in the maximum area of impact associated directly with the largest SO₂ source, Doe Run Herculaneum.

The Doe Run Co. - Herculaneum High Impact Zone

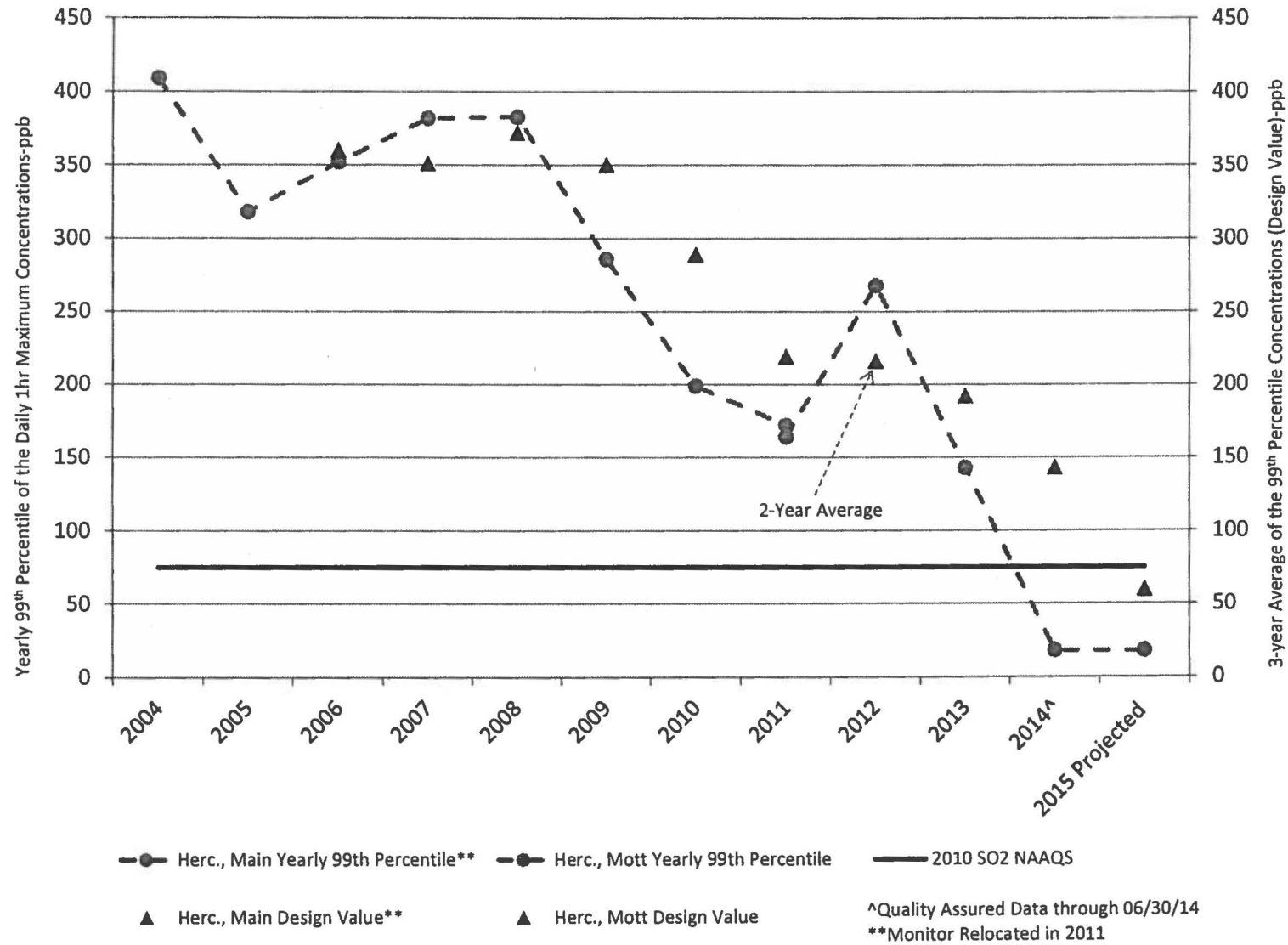


Legend

- High Impact Zone (HIZ) Receptors
- Impacting Sources
- Violating Mott St. Monitor
- Jefferson County NAA
- ★ The Doe Run Company - Herculaneum

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES
Air Pollution Control Program
Prepared: August 18, 2014

Herculaneum, Main and Mott Sulfur Dioxide (SO₂) Concentrations
(99th Percentile of the Daily 1-hour Maximum Concentrations and the Corresponding Design Values (Parts Per Billion-ppb))



1-Hour Sulfur Dioxide (SO₂) NAAQS **Jefferson County SO₂ Monitoring Data**

	99 th Percentile → 1-hour Average (ppb)					
Site	2010	2011	2012	2013	2014	2015
Herc Main	199	172	**	**	**	**
Herc Mott	*	164	268	143	18 (estimated)	18 (projected)

They will have
 Clean Data by
 Early 2016 certified.

Design Value (ppb)			
2010-2012	2011-2013	2012-2014	2013-2015
216	192	143 (estimated)	60 (projected)